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NEW SPECIES AND CHANGES IN SAPINDACEAE FROM QUEENSLAND

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Summary

Four new species of Sapindaceae from Queensland *viz Atalaya collina, Atalaya oligoclada, Cupaniopsis simulatus* and *Rhysotoechia florulenta*, and a new subspecies of *Rhysotoechia bifoliolata* Radlk., *viz R. bifoliolata* subsp. *nitida* are described and notes on their distribution and affinities provided. *Jagera dasyantha* (Radlk.) S. Reyn. is a new combination based on *Guioa dasyantha* Radlk.

The relationships of *Alectryon unilobatus* S. Reyn. with *A. reticulatus* Radlk., and *Jagera discolor* L.S. Smith ex S. Reyn. with *J. dasyantha* are assessed. *A. unilobatus* is reduced to synonymy of *A. reticulatus*, and *J. discolor* to *J. dasyantha*.

Flowers of *Alectryon kimberleyanus* S. Reyn. and *Cupaniopsis dallachyi* S. Reyn. are described for the first time. Extensions of the range of *Alectryon subdentatus* forma *pseudostipularis* Radlk., and *Atalaya calcicola* S. Reyn. are recorded.

Introduction

Increased collecting in recent years has added to the number of representative specimens of many of the Sapindaceae, dealt within my revisions in *Austrobaileya* (Reynolds 1981–84). A few new species have been discovered in the genera *Atalaya*, *Cupaniopsis* and *Rhysotoechia*, and some previously poorly known species are now well represented. Extensions of the range of *Atalaya calcicola* and *Alectryon subdentatus* are recorded, and the relationships of some closely related species in *Jagera* and *Alectryon* are assessed.

Rhysotoechia Radlk.

This is one of a few genera of Sapindaceae in which no new taxa were recognised when it was revised (Reynolds 1984, 1985), but in recent years two new taxa have been collected from north Queensland, *viz* from Mt Lewis, and from Mt White near Coen. Both new taxa have petals which are furnished with scales and are therefore referable to section *Rhysotoechia* (*fide* Radlkofer 1933).

The key to the species (Reynolds 1985) is modified to include the new species as follows:

1. Petals furnished with scales 2
   Petals scaleless, sometimes with slightly thickened basal margins 4

2. Leaves with 1 (rarely 2) pairs of leaflets; petiolules 1–7 mm long. Fruits sessile or subsessile ..... **R. bifoliolata**
   Leaves with 2–4 (rarely 1) pairs of leaflets; petiolules 8–18 mm long. Fruits usually conspicuously stipitate 3

3. Leaves with 2 or 3 pairs of leaflets; apex of leaflets usually acute or acuminate; reticulate venation lax. Inflorescences sparsely flowered. Flowers 8–10 mm diameter; pedicels 6–9 mm long. Sepals to 6 × 5 mm. Petals 4–5 mm long ..... **R. mortoniana**
   Leaves with 2–4 pairs of leaflets; apex of leaflets broad, obtuse; reticulate venation fine, close together. Inflorescences densely flowered. Flowers 6–7 mm diameter; pedicels 4–5 mm long. Sepals to 4 × 3 mm. Petals 2.5–3 mm long ..... **R. florulenta**

4. Branchlets glabrous at tips; leaflets very vernicose, finely closely reticulate-veined; petiolules 7–10 mm long. Fruits 2-locular ..... **R. flavescens**
Branchlets villous at tips; leaflets shiny, lax and coarsely reticulate-veined; petiolules 2–6 mm long. Fruits 3-locular ..... **R. robertsonii**

Rhysotoechia bifoliolata Radlk., Sitzungsber. Bayer. Akad. 9: 541, n. 591, 656 (1879).

A new taxon which strongly resembles *R. bifoliolata* was collected at Mt White near Coen, north Queensland in June 1989. It has the leaves, flowers and fruits (dried ones) of typical *R. bifoliolata*, but differs from it in its shorter petioles, very vernicose leaflets and smaller flowers. Because of these differences and disjunct distribution (*R. bifoliolata* has not been recorded north of Gladstone before (**Map 1**)), the new taxon is treated here as a subspecies of *R. bifoliolata.*

The subspecies may be distinguished as follows:

Petioles (7–)20–31 mm long. Leaflets 1 or 2 pairs per leaf, elliptic or elliptic-obovate, margins flat or recurved; upper surfaces glossy; lateral nerves usually ± patent. Branches of panicles to 3 cm long. Flowers 5–7.5 mm diameter ..... subsp. **bifoliolata**
Petioles 4–8(–11) mm long. Leaflets 2 per leaf, elliptic, margins flat; upper surfaces very vernicose; lateral nerves ± oblique. Branches of panicles 4–9 cm long. Flowers 4.5–5.5 mm diameter ..... subsp. **nitida**

R. bifoliolata Radlk. subsp. **bifoliolata**

Distinguishing characters as in the key above. For description etc. refer to *Austrobaileya* (Reynolds 1984, pp. 41–42).

R. bifoliolata subsp. **nitida** S. Reyn. **subsp. nov.** a subsp. *bifoliolatae* petiolis brevioribus (4–11 mm longis), foliolorum nervis lateralibus plerumque ± obliquis et floribus parvioribus differt. **Typus:** Queensland. COOK DISTRICT: Northern slopes of Mt White, about 2.8 km from Coen, 10 July 1990, *E.M. Ross* s.n. (holo: BRI; iso: BRI).

Small trees, glabrous except for sparsely hairy young parts and peduncles. Petioles 4–11 mm long, mealy; leaflets 2 per leaf, elliptic, apex broad, obtuse or retuse, base subacute, decurrent into petiolules, margins flat, (4.4–)5.5–6(–8.5) × (1.4–)2–3.6 cm, thick, rigid, very vernicose above; lateral nerves ± oblique, looping at tips; petiolules 1–3(–5) mm long. Panicles 5–12 cm long, branches 4–9 cm long. Flowers and old fruits as in the typical subspecies.

Specimens examined: Queensland. COOK DISTRICT: Mt White, Coen, 13°56′S, 143°11′E, Jun 1989, *Forster* 5528 (BRI); ditto, Jul 1990, *Ross* s.n. (BRI).

Distribution and habitat: Known only from the type locality (**Map 1**). It grows on steep hillsides and scree slopes, in deciduous vine thickets.

R. bifoliolata subsp. *nitida* is distinguishable from the typical subspecies in the short petioles and petiolules, very vernicose upper surface of leaflets and ± oblique lateral nerves.

Etymology: the subspecific epithet "nitida" (from the Latin *nitidus*, shining or polished) refers to the very shiny leaflets.

Rhysotoechia florulenta S. Reyn. **sp. nov.** ab aliis speciebus Australianis foliolis 2–4 jugatis, ellipticis obtusis, venatione reticulata conferta, inflorescentiis magnis, florulentis, petalis squamis ornatis distinguenda. **Typus:** Queensland. COOK DISTRICT: S.F.R. 143, Parish of Kanawarra, Carbine L.A., Mt Lewis, 16°29′S,145°16′E, alt. 1100 m, 16 October 1989, *B. Gray* 5129 (holo: BRI; iso: BRI).

Tree to 15 m tall, glabrous except for flowers, branchlets usually with a whitish bloom; lenticels scattered, ellipsoid. Leaves with 2–4 pairs of opposite or subopposite leaflets; petioles terete, pulvinate, 3.2–4.5 cm long; rachis 3–9 cm long, terete; leaflets elliptic, obtuse at both ends, base sometimes suboblique, 7.1–11.5 × 3.4–5.7 cm, coriaceous, upper surfaces very shiny and vernicose, lower ones glossy, usually with minute slender

glands on both surfaces; lateral nerves 6–8 pairs, ± patent; reticulate venation close together, conspicuous both surfaces; petiolules terete, pulvinate, 1–1.7 cm long. Panicles in upper axils or in axils of fallen leaves, thyrsiform, usually large, 10–40 × 5–40 cm, laxly branched, densely flowered; bracts and bracteoles ovate, minute. Flowers cream, 6–7 mm diameter; pedicels 4–5 mm long; outer calyx lobes broadly ovate, obtuse, to 3 × 2.5 mm, inner ones broadly elliptic-obovate, concave, to 4 × 3 mm; green or cream, resin-dotted, viscid, margins pale, ciliolate; petals broadly ovate, with broad apex and short claw at base, 2.5–3 mm long including claw, 2.5–3.2 mm wide, lower margins with 2 prominent scales and crest-like appendages; sparsely hairy on the scales and on the outside of petals from above the middle to base; scales often as long as the lamina of the petal; disc glabrous, fleshy; stamens to 3 mm long, filaments to 2.5 mm long, subulate, hairy towards base, anthers glabrous; ovary subglabrous, style short. Fruits not seen.

Distribution and habitat: Known only from type habitat (**Map 1**).

R. florulenta differs from other species occurring in Australia by the combination of 2–4-paired elliptic leaflets per leaf, reticulate venation close together, large many-flowered inflorescences, and petals furnished with scales.

Etymology: The specific epithet "florulenta" (from the Latin *florulentus*, abounding in flowers or profusely flowering) refers to the large, profusely flowering inflorescences.

Atalaya Blume

Since the genus was revised (Reynolds 1981, 1985) two new species (described below) have been discovered, and the number of representative specimens of some of the previously poorly known *Atalaya* species have increased. An extension of the range of distribution of *Atalaya calcicola* S. Reyn. from north to central Queensland was also recorded. The increased number of specimens also increased the known variability in some of the species *viz Atalaya salicifolia* (A. DC.) Blume, and in the *Atalaya australiana* Leenh. – *A. sericopetala* S. Reyn. complex (as discussed in Reynolds 1981, 1985).

The key to the species (Reynolds 1981, 1985) is modified to accommodate the new species as follows:

1. Leaves simple ..... **A. sericopetala**
   Leaves pinnate (juvenile or abnormal leaves sometimes simple) 2

2. Rachis and petiole with broad leaf-like wings; leaflets sessile or subsessile ..... **A. variifolia**
   Rachis and petiole with narrow wings or wingless; leaflets stalked, rarely subsessile 3

3. Rachis and petiole usually winged, especially in juvenile leaves 4
   Rachis and petiole even in juvenile leaves wingless 7

4. Leaflets 4–11 pairs per leaf, 2–5 mm wide ..... **A. angustifolia**
   Leaflets 1–4(–6) pairs per leaf, 5–27 mm wide 5

5. Leaflets 2–4 pairs per leaf, 10–27 mm wide, 2–4 times as long as wide. Small spindly shrubs with few branches, 0.5–3 m high .. **A. oligoclada**
   Leaflets 1–4(–6) pairs per leaf, 5–20 mm wide, 4–40 times as long as wide. Small trees to 10 m high 6

6. Leaflets glaucous especially below, mostly hairy. Flowers and fruits usually hairy ..... **A. hemiglauca**
   Leaflets green and glabrous on both surfaces. Flowers and fruits usually glabrous ..... **A. salicifolia**

7. Leaflets 2 per leaf, glaucous below; petioles and rachis with curled hairs ..... **A. calcicola**
   Leaflets 2–8 per leaf, glaucous or green below; petioles and rachis with short straight hairs 8

8. Petals 4 per flower, scales crested. Disc incomplete. Leaflets 1 or 2 pairs per leaf, ± glaucous below; lateral nerves oblique, close together, decurrent on the midrib ..... **A. multiflora**
Petals 5 per flower, scales without crests, sometimes with minute appendages. Disc complete. Leaflets 1–4 pairs per leaf, green below; lateral nerves not as above, usually ± patent and not close together 9

9. Outside of petals densely sericeous all over. Leaflets (2–)4 pairs per leaf ..... **A. sericopetala**
Outside of petals glabrous or hairy from above middle to base, the apical area usually glabrous. Leaflets 1–4 pairs per leaf 10

10. Leaflets drying hard and rigid, yellowish, vernicose, conspicuously reticulate-veined, often truncate and unequal at base. Petiolules (5–)10–35 mm long. Leaflets 3 or 4 (rarely 2) pairs per leaf ..... **A. rigida**
Leaflets not as above, usually drying greenish, thinly coriaceous, finely reticulate-veined, usually ± acute or obtuse at base. Petiolules 1–5(–8) mm long. Leaflets 1–4 pairs per leaf 11

11. Leaflets 1 or 2 pairs per leaf, usually narrowly elliptic, obtuse or ± acute at both ends, 1.7–4.5(–6) cm wide; petiolules 1–4.5 mm long. Petals densely hairy outside ..... **A. collina**
Leaflets 2–4 (rarely 1) pairs per leaf, narrowly elliptic to obovate-elliptic, apex acute, obtuse, or subacuminate, base acute or obtuse, 3–5(–6.5) cm wide; petiolules (3–)6–8 mm long. Petals glabrous or sparsely hairy outside ..... **A. australiana**

Atalaya collina S. Reyn. **sp. nov.** *A. multiflorae* Benth. similis sed foliolis plerumque anguste ellipticis obtusis vel subacutisive, floribus quinquepetalis, petalis pubescentibus, squamis plerumque sine cristis, discis completis, annularibus. **Typus:** Queensland. PORT CURTIS DISTRICT: Yarwun area 4 km SSW of Yarwun, 23°53′S, 151°06′E, 10 November 1990, *N. Gibson* 950 (holo: BRI; iso: BRI).

Small spreading trees to 5 m; bark light grey brown, rough; young parts and peduncles sparsely appressed hairy; branchlets with prominent, small, linear or globose, pale or white lenticels. Leaves with 1 or 2 pairs of leaflets; petioles 2.2–6.5(–7) cm long, shortly pulvinate, sparsely hairy with fine, short hairs; rachis 2.5–5 cm long, adaxially ridged, glabrous or subglabrous; leaflets usually narrowly elliptic, obtuse or subacute at both ends, or decurrent into petiolule at base, 5.2–12.5(–14) × 1.7–4.5(–6) cm, glabrous or lower surfaces sparsely hairy; thinly coriaceous to semi-rigid upper surfaces glossy green, drying pale brown, lower ones paler green, drying olive green; midrib pale, prominent below; lateral nerves fine, 10–14 pairs, ± patent, looping at margins, prominent; petiolules 1–4.5 mm long, often tumid, hairy. Panicles 9–26 × 5–18 cm, densely flowered, peduncles ± angular; bracts ovate, about 1 × 0.5 mm. Flowers 8–10 mm diameter; pedicels 2–5 mm long, glabrous or subglabrous; sepals elliptic, 2.5–3.5 × 2–3.5 mm, glabrous or subglabrous, ciliolate; petals obovate, 5–6.5 × 2.5–4 mm, densely hairy on the outside from above middle to base with appressed hairs, except glabrous apical area, ciliolate; scales 2-lobed, hairy, sometimes with crest-like appendages; disc complete, annular, fleshy, glabrous; filaments 3–4 mm long, hairy; ovary 3-lobed, densely hairy. Fruits 2-lobed; samarae 2.3–4.5 cm long, upper margin with a dark brown area; wings divaricate, depressed obovate, oblique, with rounded or subtruncate apex and undulate margins, 0.9–2 cm wide at broadest part; fruit portion puberulent, wings glabrous. **Fig 1D–F.**

Specimens examined: Queensland. PORT CURTIS DISTRICT: Mt Sugarloaf area, 4 km SSW of Yarwun, Calliope Shire, Dec 1983, *Gibson* s.n. (BRI)(fruiting); ditto, Nov 1990, *Gibson* 950 (BRI)(flowering); ditto, Dec 1990, *Gibson* 953 (fruiting).

Distribution and habitat: Known only from the type locality (**Map 2**). It grows on hillsides, in remnant dry scrubs, together with *A. salicifolia*, but is not as common as that species.

A. collina is distinguishable by the leaves with 1 or 2 pairs of usually narrow elliptic leaflets with obtuse or subacute tips, large inflorescences, hairy petals and glabrous

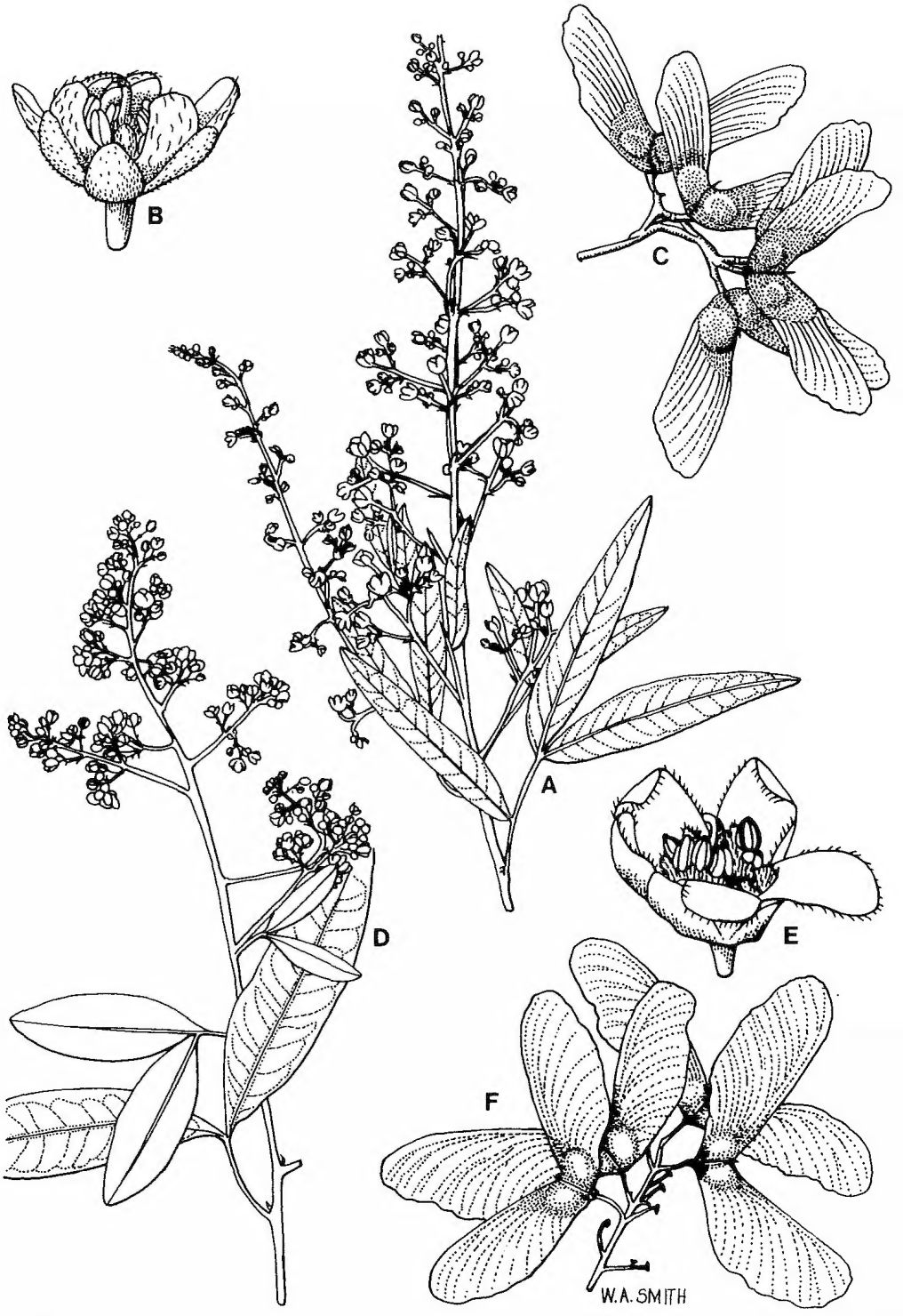


Fig. 1. *Atalaya* spp.: A–C. *A. oligoclada*: A. flowering habit × 0.67. B. flower × 4. C. fruits × 1. D–F. *A. collina*: D. flowering habit × 0.67. E. flower × 4. F. fruits × 1. A,B, Clarkson 5487; C, Coveny 6980 & Hind; D,E, Gibson 469; F, Gibson 953.

fruits. It is similar to *A. multiflora*, but the leaves are with 1 or 2 pairs, of oblong or obovate-elliptic leaflets with broad, truncate or retuse apices, the lateral nerves decurrent on the midrib; petals 4 per flower and crested, and disc incomplete in that species. The leaves are green in colour as in *A. salicifolia*, but the leaflets are usually much narrower, and the petiole and rachis usually winged in that species. *A. salicifolia* also has an earlier flowering period than that of *A. collina*, it was said to be fruiting by the time *A. collina* came into bloom.

Etymology: The specific epithet "collina" (from the Latin *collinus*, pertaining to hills) refers to the habitat, *viz* hillsides in which these plants grow.

Atalaya oligoclada S. Reyn. **sp. nov.** *A. angustifoliae* S. Reyn. proxima, cujus statura, foliorumque texturam et formam habet. Differt vero foliolis plerumque latioribus, 2–4-jugatis, inflorescentiis multo magnis et ramulis, foliolis, pedunculis et sepalis pubescentibus. **Typus:** Queensland. COOK DISTRICT: 7.7 km south of Lakeland Downs on Peninsula Development road, 15°55′S, 144°50′E, alt. 280 m, 4 September 1984, *J.R. Clarkson* 5487 (holo: BRI; iso: BRI,DNA,K,L,PERTH,QRS).

Small shrubs 0.5–3 m high, usually sparsely branched and spindly; young parts and peduncles densely hairy with short spreading rusty hairs; branchlets with white, linear lenticels. Leaves with 2 or 3 (rarely 4) pairs of leaflets; petioles 1.2–3 cm long, shortly pulvinate; rachis 1–7.5 cm long, adaxially ridged, sometimes narrowly winged; leaflets subsessile, elliptic or narrowly elliptic-ovate, subacute or obtuse at both ends, or base oblique, 6.1–9.2 × (1–)2–2.7 cm (uppermost pair usually smallest), thinly coriaceous; upper surfaces drying brownish, glabrous or finely puberulent, lower ones olive-greenish, usually hairy; lateral nerves 8–11 pairs, oblique, prominent, as fine as the reticulate venation; petiolules tumid, to 1.5 mm long. Panicles usually much longer than leaves, (7–)14–25 × (4.5–)14–28 cm, peduncles slender, laxly branched. Flowers 6–8.5 mm diameter; pedicels (1.5–)3–4 mm long, hairy; sepals elliptic, 3.5–5 × 1.5–3 mm, densely appressed hairy on the outside except for the glabrous apex, ciliolate; petals obovate, 5–6 × 2–2.5 mm, densely appressed hairy all over on the outside except glabrous apical area, ciliolate; scales entire or bifid, hairy, rarely with minute, filiform appendages; disc complete, fleshy; filaments 2.5 mm long, sparsely hairy from below middle to base; ovary 3-lobed, densely hairy. Fruits 2- or 3-lobed; samarae 2.3–2.7 cm long, densely finely hairy; wings divaricate, laterally elongate, depressed obovate, oblique, subentire, to 8 mm wide at broadest part. **Fig. 1A–C.**

Selected specimens: Queensland. COOK DISTRICT: 7.7 km S of Lakeland Downs on Peninsula Development Rd, Sep 1984, *Clarkson* 5487 (BRI); 11.7 km SE of Mt Janet on the Survey Road along the Dividing Range, 11.5 km SW of Lakeland Downs, 15°55′S, 146°46′E, Sep 1984, *Clarkson* 5509 (BRI); 12.9 km S of Lakeland Downs towards Palmer River, 15°58′S, 144°50′E, Sep 1975, *Coveny* 6980, & *Hind* (BRI).

Distribution and habitat: Common near Lakeland Downs, north Queensland (**Map 2**). It usually grows on slopes and ridges in eucalypt woodlands.

A. oligoclada is nearest to *A. angustifolia* of which it has the leaves and stature. It differs in fact by its usually broader leaflets, which are only 2 or 3 (or 4) pairs per leaf (4–6(–10) pairs in *A. angustifolia*), and in the pubescent branchlets, leaves, peduncles and sepals.

A. oligoclada is distinguishable by its very low stature (sometimes only up to half a metre high), spindly shape, broad or narrow 2–4 pairs of leaflets per leaf, and large inflorescences, and also by its hairy inflorescences, fruits and leaves.

Etymology: The specific epithet "oligoclada" (from the Greek *oligo*, few and *cladus*, branched) refers to the sparsely branched habit of this species.

Atalaya calcicola S. Reyn., Austrobaileya 1(4): 404 (1981).

This species previously known from the Chillagoe-Almaden-Mungana areas and Fanning River, north Queensland, is now recorded from Berserker Ranges, central Queensland (**Map 3**).

Specimens examined: Queensland. PORT CURTIS DISTRICT: Berserker Range, 23°21′S, 150°34′E, Nov 1985, *Hoy* 108 (BRI); ditto, *Hoy* 108A (BRI); Mt Archer area, Berserker Ranges near Rockhampton, approx. 23°20′S, 150°35′E, May 1971, *Webb & Tracey* 10556 (BRI).

Atalaya salicifolia (A. DC.) Blume, Rumphia 3: 186 (1847)

Recent collections of this species especially from northern Australia have shown it to be quite variable with at least two distinct forms being recognisable, e.g. plants from northern Australia, *viz* the Kimberley, Western Australia, Arnhem Land, Northern Territory, and northern Queensland especially the islands of Torres Strait, have large, long and broad leaflets and wide wings on rachis and petiole. They are not unlike specimens from Timor (type locality). The majority of plants from Queensland especially the southern populations, have narrow small leaflets, and usually narrow wings on rachis and petiole, or are wingless. These were previously called *Atalaya virens* C. White. These forms are not formally recognised here because they intergrade with each other.

Atalaya australiana Leenh. – **A. sericopetala** S. Reyn. complex

The known variability of these species (previously discussed in Reynolds 1981, 1985), has also increased, but the representative specimens available are inadequate to determine whether more than one species is included in each of these species or if these species constitute one very variable species.

Cupaniopsis Radlk.

The number of representative specimens of many of the species of this genus has also increased since my revision (Reynolds 1984, 1985). Flowering material of *C. dallachyi* S. Reyn. is now available for description, and the following new species has been discovered.

Cupaniopsis simulatus S. Reyn. **sp. nov.** *C. anacardioide* Radlk. et *C. dallachyi* S. Reyn. primo maxime similis sed a *C. anacardioide* foliorum venis grosse valdeque reticulatis (conspicuis ubi sicco), foliorum paginis non nitidis, et fructibus plerumque aurantiacis; a *C. dallachyi* foliolis efoveolatis, petiolulis brevipulvinatis et inflorescentiis ± glabris differt. **Typus:** Queensland. WIDE BAY DISTRICT: Fairlies Knob, 10 km NNE of Brooweena, 25°30′S, 152°17′E, 3 December 1990, *P.I. Forster* 7671 (holo: BRI; iso: BRI,L,MEL,QRS).

Trees to 25 m with straight trunk; young parts finely appressed hairy; branchlets with scattered, small, ellipsoid pale lenticels. Leaves with 2–5 (or 6) leaflets on each side of rachis; petioles 3.7–8.2(–10) cm long, terete, trigonous and pulvinate at base, densely lenticellate especially near the base and on the pulvinus; rachis (2.8–)5–17.5 cm long (to 20.5 cm in juvenile leaves), subterete; pinnae alternate or subopposite, narrowly elliptic or elliptic-oblong or subobovate, obtuse, emarginate, or subtruncate at apex, acute or obtuse at base, entire, 6.5–14.5 × 2.5–5.7 cm (to 19.4 × 5.5 cm in juveniles), glabrous, pale green, ± shiny or glossy when young; midrib broad and prominent below; lateral nerves 9–14(–16) pairs, 8–12 mm apart, ± patent, arched at their tips, slightly decurrent into midrib; reticulate venation very coarse, conspicuous in a dry state; petiolules 8–12 mm long, channelled above, shortly pulvinate at base. Panicles axillary, 8–13 cm long; peduncles branched from near base; branches patent, sparsely appressed hairy, sometimes lenticellate. Flowers to 8 mm diameter; pedicels 2–3.5 mm long, subglabrous; calyx lobes elliptic or suborbicular, 2.5–4 × 2–2.5 mm, sparsely finely appressed hairy on the outside, ± glabrous towards ciliolate margins; petals broadly ovate, shortly clawed, to 2 × 1.5 mm, hairy on outside and on the scales; disc fleshy, lobed, glabrous; filaments 1.5 mm long, hairy; anthers obloid, c. 1 mm long, glabrous; ovary glabrous. Fruits subobovoid to subglobose, shortly stipitate, 3-grooved with rounded lobes, slightly carinate at sutures, 1.7–2.8 × 1.4–2.7 cm, brownish orange when ripe; aril yellow-orange maturing to orange or red. **Fig. 2.**

Specimens examined: Queensland. WIDE BAY DISTRICT: Fairlies Knob, E of Biggenden, 25°30′S, 152°18′E, Jan 1990, *Randall* 600 (BRI); between Apple Tree Creek and Childers, Jan 1990, *Randall* s.n. (BRI).

Distribution and habitat: Known only from the type locality (**Map 3**). It is usually present as a dominant tree in hoop pine (*Araucaria cunninghamii* D. Don) rainforests.

C. simulatus is distinguishable by the narrowly elliptic leaflets with prominent coarse reticulate veins, by the orange coloured fruits, and by the nearly glabrous

inflorescences. It is very similar to *C. anacardioides* and *C. dallachyi* in its aspect, and may be distinguished from them as follows:

1. Leaflets usually foveolate in the axil of the lateral nerves below. Inflorescences densely hairy. Branchlets densely lenticellate ..... **C. dallachyi**
   Leaflets not foveolate. Inflorescences usually sparsely hairy. Branchlets sparsely lenticellate 2

2. Leaflets mostly obovate or elliptic with mostly broad retuse or obtuse apex, upper surfaces usually very vernicose and darker than below; reticulate venation fine, prominent. Peduncles pubescent. Fruits golden yellow, sometimes tinged with red, glabrous. Small spreading trees rarely more than 15 m high ..... **C. anacardioides**
   Leaflets narrowly elliptic to subobovate with obtuse or subtruncate apex; upper surfaces not as above, slightly shiny, reticulate venation coarse, very conspicuous especially in a dry state. Peduncles sparsely hairy. Fruits orange or brown, puberulent. Tall straight trees to 25 m high ..... **C. simulatus**

Etymology: The specific epithet "simulatus" (from the Latin *simulans*, resembling or imitating) refers to the resemblance of this species to *C. anacardioides* and *C. dallachyi.*

Cupaniopsis dallachyi S. Reyn., Fl. Australia 25: 199 (1985).

Add to the description:

Panicles 8.5–13.5(–25) × 2.5–4.5 cm, densely flowered; male flowers more numerous than females; peduncles ± angular, pubescent, usually branching from near base, branches very short; bracts ovate, densely hairy. Flowers 7–8.5 mm diameter, male and female usually nearly the same size, perfumed; pedicels 3.5–5 mm long, pubescent; calyx lobes 3–4 × 2.5–3 mm, elliptic or suborbicular, usually with dense appressed hairs on outside; petals broadly ovate, to 2 × 2 mm, white, scales sparsely hairy; disc fleshy, glabrous; filaments 2–2.5 mm long, densely patent hairy; anthers to 2 mm long; ovary glabrous.

Representative specimen: Queensland. COOK DISTRICT: S.F.R. 310, Parish of Bellenden Ker, Goldfield L.A., 17°18′S, 145°48′E, Nov 1987, *Gray* 4668 (BRI).

Alectryon Gaertner

The number of representative specimens of many of the *Alectryon* species has also increased since the genus was revised (Reynolds 1983, 1985, 1987). Flowering material of *A. kimberleyanus* S. Reyn. has been collected, and an extension of range of *A. subdentatus* recorded. Increased numbers of representative specimens has also made it possible to assess more closely the relationships of *A. unilobatus* S. Reyn. and *A. reticulatus* Radlk.

Alectryon kimberleyanus S. Reyn., Austrobaileya 1(5): 477 (1983).

Add to the description:

Inflorescences thyrsiform panicles, 2.7–3 cm long, to 0.8 cm wide, peduncles densely rusty hairy; bracts ovate-elliptic, 3–3.5 × 1–1.5 mm, densely appressed hairy outside. Flowers cream; calyces to 3 × 3.5 mm, sparsely hairy, lobes ovate to 1 × 1 mm; petals absent; stamens to 2.5 mm long; filaments to 1 mm long, glabrous or sparsely hairy; anthers c. 1.5 mm long, mostly glabrous.

Representative specimen: Western Australia. Lone Dingo, approx. 25 km NNW of mining campsite, Mitchell Plateau, N Kimberley, Oct 1982, *Kenneally* 8578 (PERTH).

Alectryon subdentatus forma **pseudostipularis** Radlk., Feddes Repert. 20: 28 (1924); Reynolds 1985, p. 30.

This form is now recorded from north of Gladstone, Port Curtis District and extends as far west as Chesterton Range, Maranoa District (**Map 4**). It had previously been recorded from only southeastern Queensland.

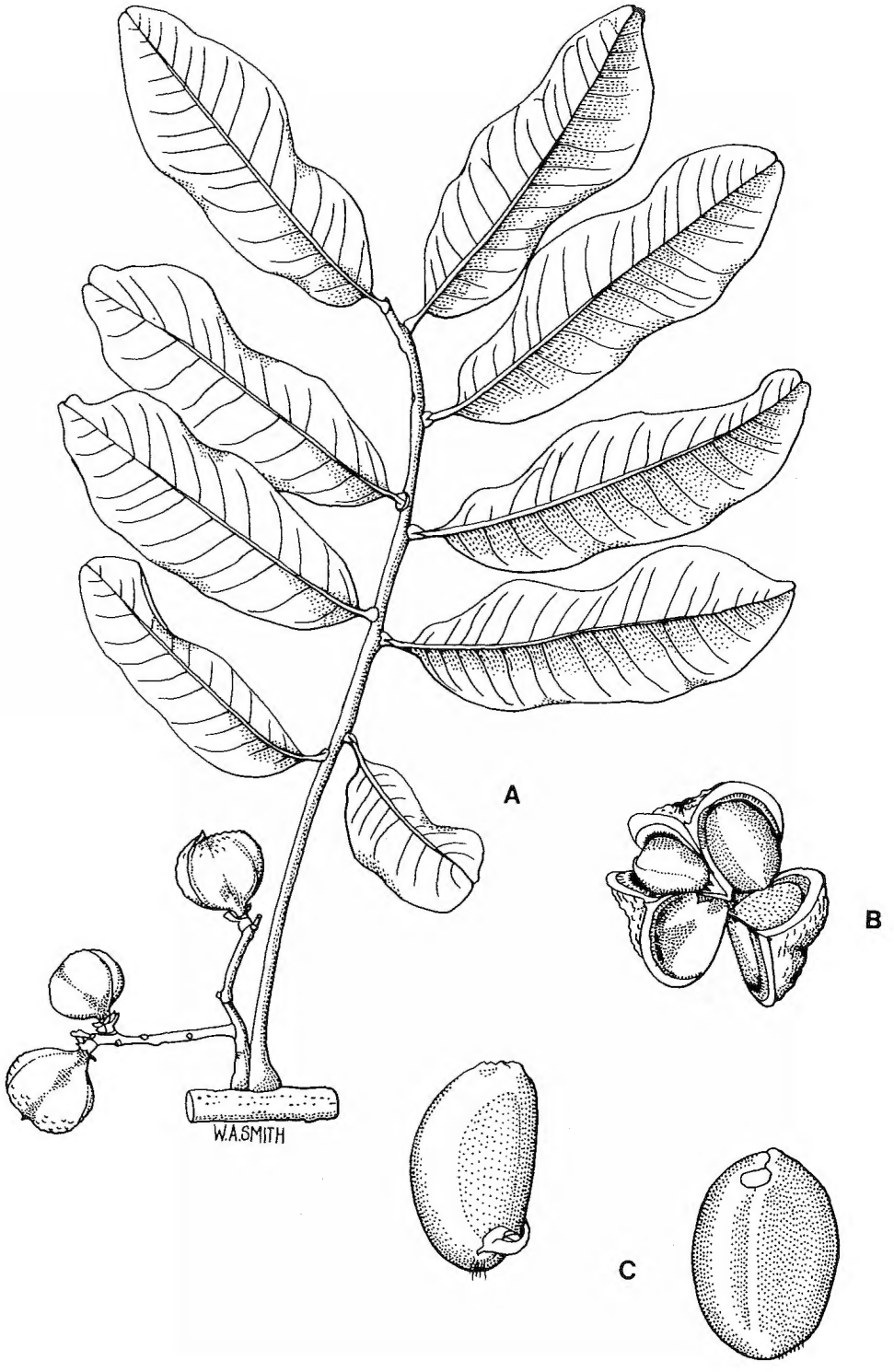


Fig 2. *Cupaniopsis simulatus*: A. fruiting habit × 0.5. B. dehisced fruit showing seeds and hairy insides of valves × 1. C. seeds and aril covering × 2. A–C, Forster 7671.

Representative specimens: Queensland. PORT CURTIS DISTRICT: The Caves, 23°11′S, 150°28′E, Jan 1986, *Hoy* 157 (BRI); S.F. 60, Rundle Range, 23°38′S, 150°58′E, Dec 1987, *Gibson* 1035 (BRI); Beecher S.F. 150, Por. 75, Calliope Shire, 23°55′S, 151°11′E, Nov 1987, *Gibson* 1011 (BRI). MARANOA DISTRICT: Chesterton Range, Mt Moffatt section of Carnarvon National Park to NW of Marlong Plain and SW of Mt Sugarloaf (c. 90 km SW of Rolleston and 14 km N of National Park Head Quarters), 24°56′S, 147°56′E, Nov 1990, *Henderson* H 3505 & *Robins* (BRI).

A. reticulatus Radlk. and **A. unilobatus** S. Reyn.

The close relationship of these two species was noted when *Alectryon unilobatus* was described (Reynolds 1983, p. 476). It was also noted by Dr Leenhouts in his revision of *Alectryon* (1988, p. 327).

When *A. unilobatus* was described, it was represented in herbaria by a few variable specimens. Although these appeared to match quite well with the description of *Alectryon reticulatus* Radlk. from New Guinea, especially in the characteristic 1-lobed fruits, no specimen of this species was available for comparative study. Moreover because *A. unilobatus* appeared to contain two ± distinct forms represented by northern and southern collections, no attempt was made to assess the relationship of the two species, at that time.

The number of available representative specimens of *A. unilobatus* has increased substantially since it was described, its two forms present are now also better represented in herbaria, and one of two specimens of *A. reticulatus* Radlk. cited by Leenhouts (1988) has become available for study. This latter specimen *viz Hartman* s.n. (MEL 1537050) from Torres Strait, Queensland, matches most of the specimens from north Queensland including the type of *A. unilobatus* from Pascoe River, it differs slightly in the leaves from those of the southern collections.

Although the type of *A. reticulatus* Radlk., from the islands in the Gulf of Papua has not been seen, I am quite confident that this species is conspecific with *A. unilobatus* S. Reyn. so the latter name is now reduced to synonymy under *A. reticulatus* Radlk., the earlier name.

Alectryon reticulatus Radlk., Sitzungsber. Bayer. Akad. 20: 255(1890). **Type:** SE New Guinea, islands in the Gulf of Papua, before 1886, *collector unknown* (holo: M, *n.v.*).

A. unilobatus S. Reyn., Austrobaileya 1(5): 475–476 (1983). **Type:** Queensland. COOK DISTRICT: Pascoe River, in 1977, *L.J. Webb & J.G. Tracey* 13123 (holo: BRI)

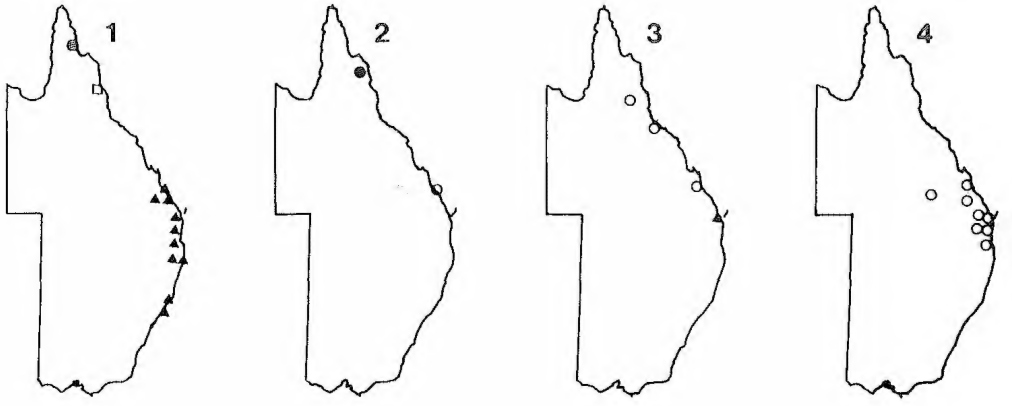
Two forms are present in Queensland as indicated above, and although they are now better represented in herbaria they are not formally recognised because they are connected by intermediates. Plants from north Queensland, *viz* Torres Strait islands, Weipa, Pascoe, Pennefather and Olive Rivers, have thin leaflets which are greenish or greyish green when dry and are finely nerved and reticulate-veined; their peduncles and calyces are very sparsely hairy, and fruits are smaller with a thin pericarp. Plants from southeast Queensland, *viz* Mt Eerwah, Mt Nebo, and near Gympie, have thicker, rigid leaflets which tend to dry somewhat yellowish, are prominently coarsely reticulate-veined, have denser hairs on peduncles and calyces, and have larger fruits with thicker pericarp. Plants from Magnetic Island and Fanning River, north Queensland, appear to be intermediate between these forms.

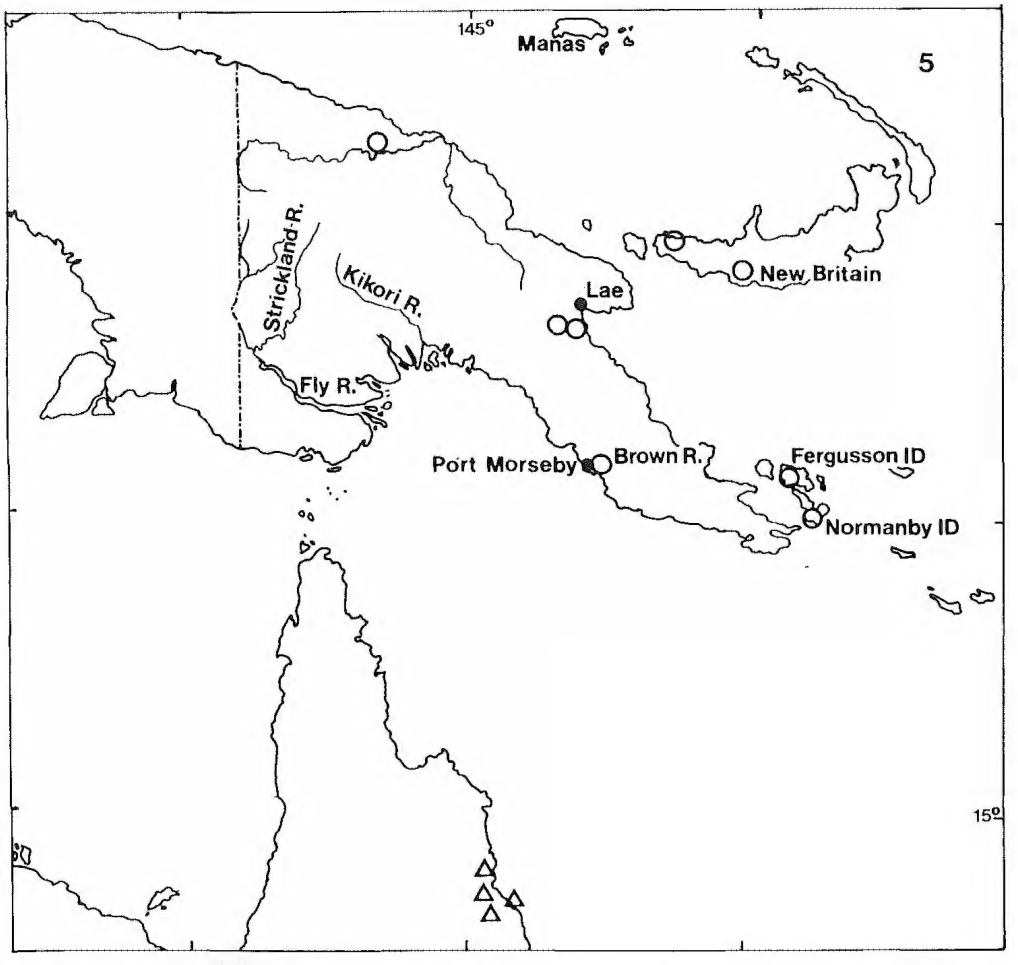
Jagera Blume

Jagera discolor L.S. Smith ex S. Reyn. and **J. dasyantha** (Radlk.) S. Reyn.

The relationship of these species and whether they are conspecific or not, has been investigated since 1985, when Dr van Welzen (pers. comm.) drew my attention to the similarities (especially in the flowers) of the type of *Guioa dasyantha* Radlk. with *Jagera discolor* specimens. He presumed these species to be conspecific (1990, p. 304).

The type of *Guioa dasyantha* Radlk. (flowering specimen from Sepik area, northern New Guinea) was examined. The flowers were that of a *Jagera* and not a *Guioa*, so the species is transferred to *Jagera* and a new combination *Jagera dasyantha* (Radlk.) S. Reyn. is thus made below.





Maps 1–5. Distribution of Sapindaceae spp. 1. *Rhysotoechia* spp.: *R. bifoliolata* subsp. *bifoliolata* ▲; *R. bifoliolata* subsp. *nitida* ●; *R. florulenta* □. 2. *Atalaya* spp.: *A. collina* ○; *A. oligoclada* ●. 3. *Atalaya calcicola* ○; *Cupaniopsis simulatus* ▲. 4. *Alectryon subdentatus* forma *pseudostipularis* ○. 5. *Jagera dasyantha*: New Guinea form ○; Queensland form △.

As indicated above, the type of *J. dasyantha* resembles *J. discolor* specimens especially those from New Guinea. It, however, differs from the type of *J. discolor* (from Clump Mountain, northern Queensland) in having more leaflets per leaf, narrower leaflets with a pronounced acumen at apex, slender peduncles and smaller flowers.

Plants from northern Queensland are typical of *J. discolor*, while most of the plants from New Guinea resemble the type of *J. dasyantha*, differing only slightly in the shape of leaflets and coarser hairs on the midrib of leaflets. Although no other collection of *J. dasyantha* from the type locality has been seen I am quite certain that all these New Guinea plants belong to the one taxon. A few specimens from New Guinea however approach *J. discolor* ones from Queensland, especially those from south New Guinea *viz* Owen's Corner, Kakoda Trail, N of Sogeri, *Hartley* 10765 (LAE); ditto, *Schodde* 2954 (LAE). These appear to be intermediate between typical *J. discolor* and typical *J. dasyantha* specimens.

Because of the presence of these intermediates and also because the specimens available for study are few and inadequate, I have after discussion with Dr Leenhouts (who has been revising *Jagera* (pers. comm. 1987)) decided to combine the two species and treat the taxa as belonging to one very variable species. *Jagera discolor* is therefore now reduced to synonymy under *Jagera dasyantha*, the earlier name.

Jagera dasyantha (Radlk.) S. Reyn. **comb. nov.** *Guioa dasyantha* Radlk., Bot. Jarb. 56: 277 (1921). **Type:** Papua New Guinea. Sepik area, 1912–1913, *Ledermann* 10365 (iso: L.!)

J. discolor L.S. Smith ex S. Reyn., Austrobaileya 1(5): 407, f. 28A (1981). **Type:** Queensland. COOK DISTRICT: Clump Mountain, 7 November 1951, *L.S. Smith* 4977 (holo: BRI).

This species is very variable with at least two forms being recognisable (as indicated above) but these forms are not formally named here because of the presence of intermediates.

New Guinea form: This occurs in northern New Guinea, New Britain and on Milne Bay Islands (**Map 5**). Leaves with 4–8 pairs of leaflets; petiole terete, trigonous at broad base; rachis terete; leaflets elliptic-ovate or obliquely oblong, apex long acuminate or caudate (acumen 10–20 mm long), or shortly acuminate or rarely obtuse; base obtuse, oblique, subequal; 2.4–4.5(–5.7) cm wide, upper surfaces glabrous or midribs hairy, lower ones finely appressed hairy; lateral nerves 5–12 pairs, strongly arched or ± oblique; reticulate venation often obscure above. Peduncles slender, 2.5–8 cm long; bracts minute, 0.5–1 mm long. Flowers 1.7–2 mm long; pedicels 2 mm long.

Note: The type has leaflets with long caudate tips (acumen to 20 mm long), strongly arcuate lateral nerves, and with midribs above glabrous. Most specimens have shorter acumen, midribs hairy above, and ± oblique or ± arcuate lateral nerves.

Queensland form: This form previously known as *J. discolor* occurs in northern Queensland (**Map 5**) (Reynolds 1981, p. 407). Leaves with 4 or 5 (or 6) pairs of leaflets; petioles subterete, broad and pulvinate at base; rachis subterete; leaflets elliptic or elliptic-ovate or -oblong; apex abruptly shortly acuminate (acumen less than 10 mm long) or obtuse; base usually broad unequal; (3–)4.8–5.7(–6.5) cm wide, glabrous above, lower surfaces finely appressed hairy; lateral nerves 8–12 pairs, ± oblique and ascending; reticulate venation prominent, usually forming a fine mesh. Peduncles 9–20 cm long, ± angular when dry; bracts prominent, 1–3(–5) mm long. Flowers to 2.5 mm long; pedicels 2–4 mm long.

Plants from Sogeri area, Western District, southern New Guinea, appear to be intermediate between the above forms.

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